

# ENERGY MATTERS



May/June 2001

## ISSUE FOCUS:

The Volatile Energy Market

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Process heating roadmap now online, see page 5.

## INSERT:

Motor Systems



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## California Cement Plant Battles Electricity Interruptions with Its Own Cogeneration Plant

California's energy crisis has hit the state's businesses hard, especially those in energy-intensive industries. But Gary Thornberry, environmental/service manager at California Portland Cement Company's (CPCC) Colton Cement Plant, says his company has a plan to combat power interruptions. This plan includes reactivating a mothballed coal-fired cogeneration plant that the company built back in the early 1980s, and reactivating two boilers that use waste heat from cement kilns.

The Colton Cement Plant has an interruptible power contract with its electricity provider, Southern California Edison Company. Thornberry says that power interruptions have caused multiple problems at the Colton plant, including wasted raw materials and unusually low inventories.

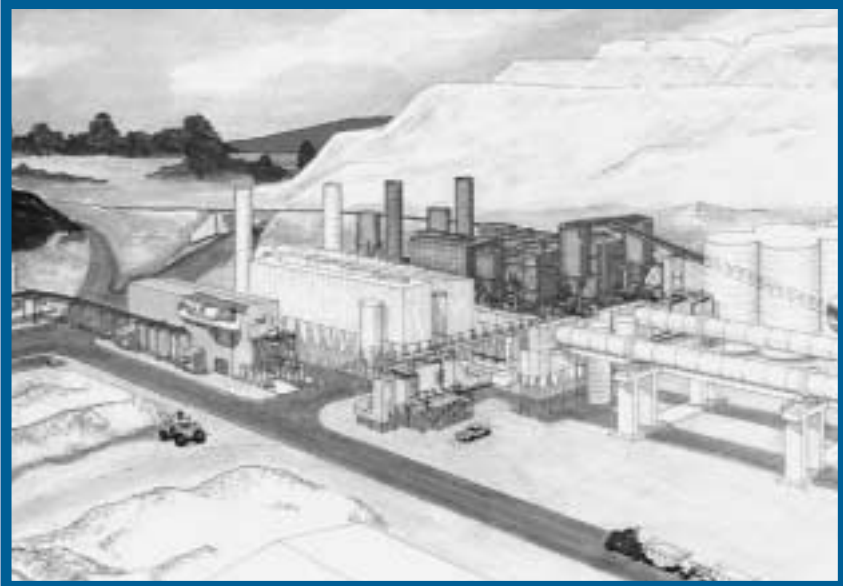
The Colton plant normally produces 750,000 tons of cement per year. The company was founded in 1891 and has provided cement for Arizona's State Capitol, the Los Angeles Colosseum, and the new

Disney California Adventure theme park, among many others.

The plant, which under ordinary circumstances would run 24 hours per day and 7 days per week, requires an average electricity supply of 14 MW per hour, with a peak load of about 20 MW per hour. Rotary kilns heat a mixture containing calcium, silica, iron, and aluminum to nearly 2800°F. Heating up the kilns often takes 8 to 12 hours, so when the power is interrupted, the kilns start to cool and a significant amount of energy is wasted. Furthermore, the cooling and heating cycles caused by the interruptions can result in expansion and contraction of the kilns and associated equipment, which shortens equipment life.

So CPCC's management has decided to take its cogeneration plant, powered by a fluidized bed coal-fired boiler, out of mothballs. The cogeneration plant exists because, in the early 1980s, electricity

*(continued on page 2) ►*



*The Colton Cement Plant's cogeneration facility is represented by the darker structures in this artist's rendering.*

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## California Cement Plant *continued from page 1*

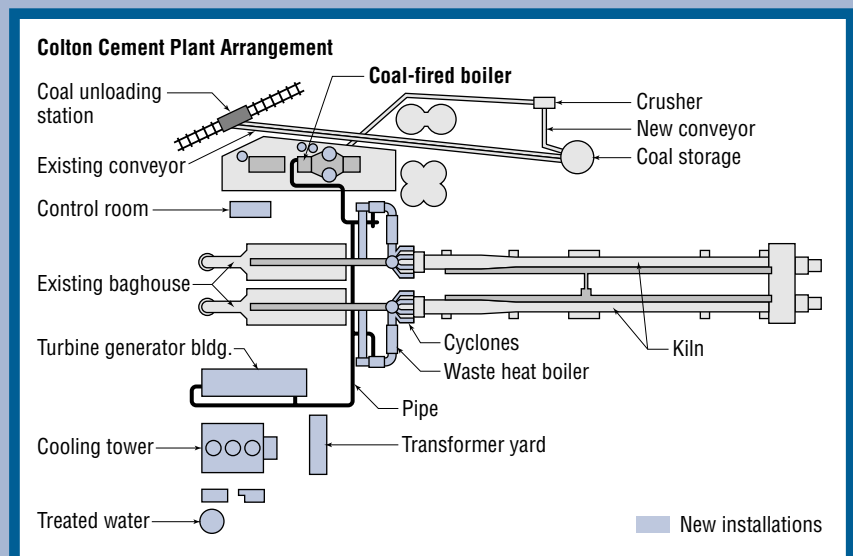
costs were projected to rise considerably. At that time, CPCC built the cogeneration plant to combat the higher electricity prices. However, once the plant was built in 1985, Southern California Edison offered electricity at a cost low enough to convince CPCC to deactivate and keep the cogeneration plant in reserve.

CPCC plans to have the coal-fired plant up and running in late June of 2001. At the same time, CPCC hopes to reactivate two waste heat boilers that produce 5 to 6 MW per hour. The boilers use waste heat from the cement kilns.

Burning coal does produce emissions,

but, Thornberry says, "The low operating temperature keeps the NO<sub>x</sub> down and the limestone injection system controls the SO<sub>x</sub> emissions. We are also in the process of installing an ammonia injection system to further reduce NO<sub>x</sub> emissions."

The cogeneration plant is expected to provide 20 MW per hour and CPCC plans to sell unused power, though a buyer has not been determined. At this point, Thornberry says, it hasn't been decided if CPCC will stay on the grid after the cogeneration plant is operating. Regardless, like many industrial sites in the region, CPCC must now seriously consider which power alternatives will ensure smooth and efficient operations. ●



**The power source of the Colton Cement Plant's cogeneration facility is the fluidized bed coal-fired boiler, which is depicted near the top of this schematic.**

## INDUSTRY SHOWCASE TO FOCUS ON THE LATEST IN METALS, MINING, AND PETROLEUM INDUSTRIES

The State of Utah and OIT will present The Utah 2001 Industry Showcase August 27-29, 2001, in Salt Lake City. The event is being held to support, promote, and highlight the use of advanced technologies in aluminum manufacturing, petroleum refining, metal-casting, and mining. Participants will be able to:

- Tour plants in which the newest technologies are operating
- Learn about new opportunities for funding plant improvements
- Hear the latest news on cost- and energy-saving methods
- Network with industry and government leaders
- Attend a Congressional Forum on the future of aluminum, mining, and petroleum

For details, log on to [www.oit.doe.gov/news.shtml](http://www.oit.doe.gov/news.shtml), or call OIT toll free at 877-648-7967.

## OIT Assists Industries Hard Hit by Volatile Energy Market

The high cost of energy is taking a toll on U.S. industry—but industry is fighting back, and OIT and BestPractices are helping. Here we present some brief observations of how three industries have been affected by, and are coping with, the volatile energy market. Plus, we provide examples of how OIT has helped companies in those industries improve energy efficiency and productivity, thus giving participants a competitive advantage. Your company might similarly benefit from OIT and BestPractices assistance. Read on to learn more.

### Aluminum Industry

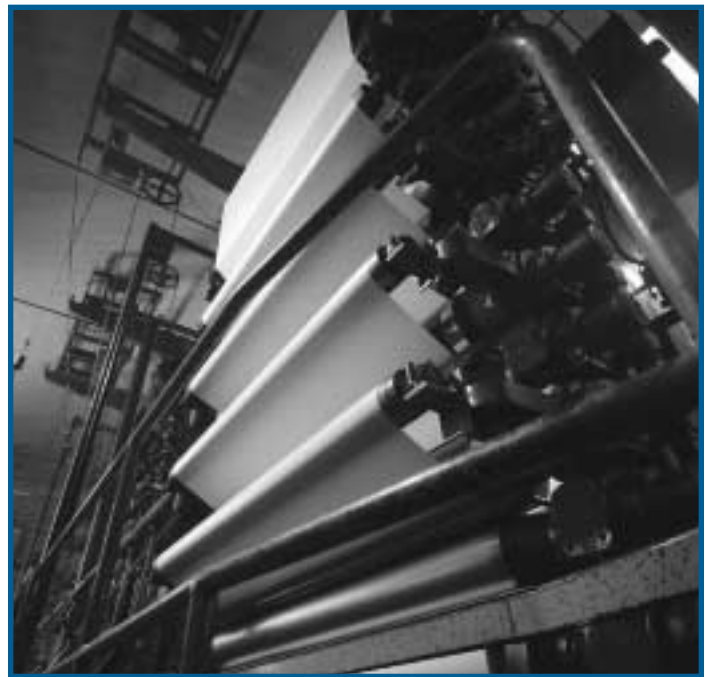
Energy accounts for at least one-third of the cost of primary aluminum construction. It's no surprise then, that the aluminum industry has been one of the hardest hit by high energy prices and shortages, especially in the Pacific Northwest. California's demand for power and the Pacific Northwest's low water levels in hydroelectric project reservoirs have severely stressed the region's power supply, escalating prices to record levels. Robin King, vice president of public affairs at the Aluminum Association, says that of the 10 aluminum plants in the Northwest, only two are still operating, and minimally at that.

In the mean time, BestPractices has continued to work with the aluminum industry, offering tools to improve plant energy efficiency, enhance environmental performance, and increase productivity.

OIT, for example, has worked in partnership with Alcoa on a demonstration project

at an aluminum extrusion plant in Lafayette, Indiana. Alcoa had already implemented a strategy that included improvements to the compressed air system, furnace tuning and repair, pump optimization, and improved heat recovery. Encouraged by OIT, Alcoa performed a plant-wide energy efficiency assessment that identified eight areas for further analysis. These included energy- and cost-saving opportunities associated with high-pressure extrusion press pumps, an extrusion unit's billet heaters, an ingot plant water recirculation system, a compressed air system, plant lighting, plant steam boilers, melting furnaces, and energy monitoring. By addressing these issues, Alcoa is expecting to see annual savings of \$1.9 million from an initial capital investment of \$2.3 million, with a payback period of 1.2 years.

Read about the Alcoa case study and others on the BestPractices Web site at [www.oit.doe.gov/bestpractices/explore\\_library](http://www.oit.doe.gov/bestpractices/explore_library).



*Some forest products manufacturers can offset high energy prices by producing some of their own electricity, but they also utilize BestPractices resources to save energy and money.*

Paper Association (AF&PA) and director of Corporate Energy and Environmental Services for Potlatch Corporation. However, he says, the forest products industry can generate some of its own electricity. In fact, there are some forest product companies that sell electricity to the grid. Potlatch, Nicholson says, is one of those.

Potlatch owns two facilities with small hydroelectric dams in Minnesota, and cogeneration plants in Idaho, Minnesota, and Arkansas. These power-producing facilities comply with the Public Utility Regulatory Policy Act (PURPA). "Those mills have a tremendous advantage," Nicholson says.

Nicholson further states that there is an extraordinary amount of interest in the black liquor gasification process. DOE-funded research and development in this area is focusing on advanced methods of processing spent pulping liquor from pulp mills into gas for use as an energy source.

*(continued on page 4) ►*

### Forest Products Industry

High energy prices have also dealt the forest products industry some severe blows. Mill closings have plagued the Northwest, and energy prices have been a significant factor, according to Bill Nicholson, chair of the Energy Council, American Forest



*BestPractices works with aluminum manufacturers, which have been hit hard by high energy prices.*

**OIT Assists Industries**  
*continued from page 3*

For more information on black liquor boiler projects, see fact sheets posted on the OIT Forest Products R&D Portfolio page at [www.oit.doe.gov/forest/page3a.shtml](http://www.oit.doe.gov/forest/page3a.shtml).

As with the aluminum industry, OIT has been working with forest products companies to help reduce energy use, improve productivity, and boost the bottom line. An example is the demonstration project at Boise Cascade pulp and paper mill in International Falls, Minnesota. Boise Cascade and OIT are partners in the project, which began with a cost-shared plant assessment that led to implementation of four projects and two process modifications. These include conserving mill water, rerouting turbine room steam trap condensate, using foul condensate heat for demineralized water makeup to hotwells, and modifying selected processes to decrease effluent flow and energy consumption.

These projects and modifications are expected to remove 45.6 MMBtu per hour from the effluent, exceeding the reduction target of 35 MMBtu per hour. In addition, it is expected that the mill will reduce steam use by 28,100 pounds per hour and effluent flow by 2.2 million gallons per day (an 8% reduction in total flow). To learn more about the Boise Cascade Mill energy assessment and other assessments, visit the BestPractices Web site at [www.oit.doe.gov/bestpractices/explore\\_library](http://www.oit.doe.gov/bestpractices/explore_library).

Boise Cascade's International Falls Mill has a tradition of identifying and implementing energy projects that improve process efficiency and reduce environmental impact. Over the last 5 years, the mill has identified and completed a number of energy projects in addition to those identified in the recent assessment. Three of the larger projects include bleach plant effluent heat exchangers, non-contact water recycling, and contaminated condensate heat exchangers. The reward has been savings of 91 MMBtu per hour with an approximate value of \$3.4 million per year.

**Chemicals Industry**

Though the volatile energy market has not had as great an impact on other industries, many are still feeling constraints from high energy prices. Jeff Hackworth, energy manager for the Rohm and Haas chemical plant in Deer Park, Texas, says that high natural gas prices have cut into his company's profit margins. Yet, because Rohm and Haas began a serious energy-saving program in 1997, Hackworth says the company has received "tremendous benefits."

Part of that energy program included a project in which Rohm and Haas partnered with OIT and four other companies to do a plant-wide assessment for energy efficiency at the Deer Park facility. The team has identified more than 125 projects, more than 40% of which have been completed over the last 3 years, and additional projects are being evaluated.

Examples of energy-saving activities include a steam system leak and trap assessment, a compressed gas leak audit, an air compressor and dryer audit, a motor systems assessment, an infrared thermography audit, and more. The findings from these audits and assessments have led to modifications and improvements with dramatic impacts. Results have included a 17% energy reduction per pound of chemical produced and a 10% decrease in energy consumption, despite a 7.7% increase in production. Overall, on an annual basis, the plant has reduced energy use by 3.25 trillion Btu, reduced NO<sub>x</sub> emissions by 800 tons, reduced CO<sub>2</sub> emissions by 51,350 tons, and saved \$15 million. And they're not stopping there. "The higher energy costs are driving us to be more aggressive with energy efficiency progress," Hackworth says. "We'd like to

reduce energy use by an additional 5% to 7% or more by 2004." For more information on the OIT/Rohm and Haas project see page 10 of OIT's *Plant Profiles: Industrial Energy Management in Action* brochure at [www.oit.doe.gov/bestpractices/pdfs/plantprofiles.pdf](http://www.oit.doe.gov/bestpractices/pdfs/plantprofiles.pdf).



*The chemicals industry is another area in which BestPractices software, publications, and technical assistance have helped to improve plant efficiency, enhance environmental performance, and increase productivity.*

**Get Involved**

The technologies, processes, and equipment utilized in the preceding examples can be used in similar circumstances in many industries. There is vast potential for replicating the energy savings, cost reductions, and productivity improvements that have been demonstrated in these and other projects that OIT and BestPractices have supported. Don't miss out on these benefits for you and your company. Find out about best energy management practices, including the adoption of new, efficient technologies, by logging on to the OIT Web site at [www.oit.doe.gov](http://www.oit.doe.gov) and the BestPractices Web site at [www.oit.doe.gov/bestpractices](http://www.oit.doe.gov/bestpractices). You can read more about the projects discussed in this article by accessing the *Plant Profiles* brochure at [www.oit.doe.gov/bestpractices/pdfs/plantprofiles.pdf](http://www.oit.doe.gov/bestpractices/pdfs/plantprofiles.pdf). ●



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## A to Z of Restructuring Terms

With all the talk of restructuring and energy issues, there are many technical terms flying about. Here is a short glossary that may help you understand how restructuring may affect your facility. Sources are listed below and include Web site addresses for more complete glossaries and information.

**Average Cost**—The revenue requirement of a utility divided by the utility's sales. Average cost typically includes the costs of existing power plants, transmission, and distribution lines, and other facilities used by a utility to serve its customers. It also includes operating and maintenance, tax, and fuel expenses.

**Avoided Cost**—The cost the utility would incur but for the existence of an independent generator or other energy service option.

**Buy Through**—An agreement between utility and customer to import power when the customer's service would otherwise be interrupted.

**Direct Access**—A key feature of the restructuring process. Direct access is the opportunity for consumers to bypass their local utility, the generator of their electricity, and purchase electricity from the generator of their choice.

**Distributed Generation**—A distributed generation system involves small amounts of generation located on a utility's distribution system for the purpose of meeting local (substation level) peak loads and/or displacing the need to build additional (or upgrade) local distribution lines.

**Futures Market**—Arrangement through a contract for the delivery of a commodity at a future time and at a price specified at the time of purchase. The price is based on an

auction or market basis. A standardized, exchange-traded, and government regulated hedging mechanism.

**Independent System Operator (ISO)**—A neutral and independent organization with no financial interest in generating facilities that administers the operation and use of the transmission system.

**Independent Power Producer (IPP)**—Any entity not regulated by the government as a public utility that owns or operates an electricity generating facility and offers electric power for sale to utilities and/or the public (also known as Non-Utility Generator).

**Marginal Cost**—In the utility context, the cost to the utility of providing the next (marginal) kilowatt-hour of electricity, irrespective of sunk costs.

**Net Metering**—Allows the electric meters of customers with generating facilities to turn backwards when the generators are producing energy in excess of the customers' demand, enabling customers to use their own generation to offset their consumption over a billing period.

**PURPA**—The Public Utility Regulatory Policy Act of 1978. Among other things, this federal legislation requires utilities to buy electric power from private "qualifying facilities," at an avoided cost rate. This avoided cost rate is equivalent to what it would have otherwise cost the utility to generate or purchase that power themselves. Utilities must further provide customers who choose to self-generate a reasonably priced back-up supply of electricity.

**Restructuring**—The reconfiguration of the vertically integrated electric utility. Restructuring usually refers to separation of the various utility functions into individually operated and owned entities.

**Retail Competition**—A system under which more than one electric provider can sell to retail customers, and retail customers are allowed to buy from more than one provider.

**Spot Markets**—Any of a number of venues in which purchases and sales, as of electricity, are made by a large number of buyers and sellers, with new transactions being made continuously or at very frequent intervals.

**Unbundling**—Disaggregating electric utility service into its basic components and offering each component separately for sale with separate rates for each component. For example, generation, transmission, and distribution could be unbundled and offered as discrete services.

**Vertical Integration**—An arrangement whereby the same company owns all the different aspects of making, selling, and delivering a product or service. In the electric industry, it refers to the common arrangement whereby a utility owns generating plants, transmission systems, and distribution lines to provide all aspects of electric service.

Definitions have been excerpted and adapted from *The Glossary of Electric Utility Restructuring Terms:1996*, a National Council on Competition and the Electric Industry Web site at [www.ncouncil.org/pubs/glossary.html](http://www.ncouncil.org/pubs/glossary.html); *The Consumer's Glossary of Electric Utility Restructuring Terms*, AARP's Public Policy Institute; and the Green Power Network Web site at [www.eren.doe.gov/greenpower/home.shtml](http://www.eren.doe.gov/greenpower/home.shtml). ●

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## New Roadmap for Process Heating Technology Identifies Priority R&D Goals

Process heating technologies supply heat to nearly all manufacturing processes. Because they consume 17% of U.S. industrial energy, process heating technologies represent a significant opportunity to improve industrial productivity and energy efficiency. Advanced technologies and operating processes have the potential to reduce process heating energy consumption by 5% to 25% over the next decade.

The process heating community, led by the Industrial Heating Equipment Association and OIT, presents *Roadmap for Process Heating Technology: Priority Research and Development Goals and Near-Term, Non-Research Goals to Improve Industrial Process Heating*—a comprehensive plan for meeting industrial process heating needs now and in the future.

To learn more about the plan to achieve technological and process improvements in

process heating, download the roadmap from the BestPractices Web site at [www.oit.doe.gov/bestpractices/pdfs/process\\_heating\\_0401.pdf](http://www.oit.doe.gov/bestpractices/pdfs/process_heating_0401.pdf). You can also review the Process Heating Supplement, which appeared in the November/December 2000 issue of *Energy Matters* at [www.oit.doe.gov/bestpractices/explore\\_library/energy\\_matters.shtml](http://www.oit.doe.gov/bestpractices/explore_library/energy_matters.shtml). ●

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## Steam Workshops Offer Relief from High Energy Bills

Steam plants took a pounding from high energy bills last winter. Like many other steam plant managers, you might be seeking ways to tune up your operation using the latest energy efficiency measures. OIT's BestPractices can help.

BestPractices Steam program offers workshops specifically designed for energy managers. These workshops, organized in cooperation with the Alliance to Save Energy, utility companies, and trade associations, are venues for managers to gain knowledge about the technical, personnel, and financial aspects of efficient plant operations. Program tools, such as tip

sheets, case studies, diagnostic software, and information about training and financial assistance, help managers identify opportunities for improvement.

Steam workshops are held at locations across the country. Check the BestPractices training calendar at [www.oit.doe.gov/bestpractices/take\\_class/calendar.shtml](http://www.oit.doe.gov/bestpractices/take_class/calendar.shtml) for upcoming workshops in your area. The workshops are offered at no or low cost.

Take part in discussions and presentations on:

- The total-system approach to steam efficiency

- Financial benefits or outcomes of implementing efficiency
- An overview of steam reference materials (technical, managerial, and financial)
- Energy efficiency success stories

In addition, regional experts add technical discussions on topics, such as steam traps, water treatment, and combustion controls.

If you are an industry professional interested in giving an informational (non-commercial) presentation or case study at one of the workshops, please contact Christopher Russell of the Alliance to Save Energy at [crussell@ase.org](mailto:crussell@ase.org). ●

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## Efficient Pump System Performance Begins with Life Cycle Cost Analysis

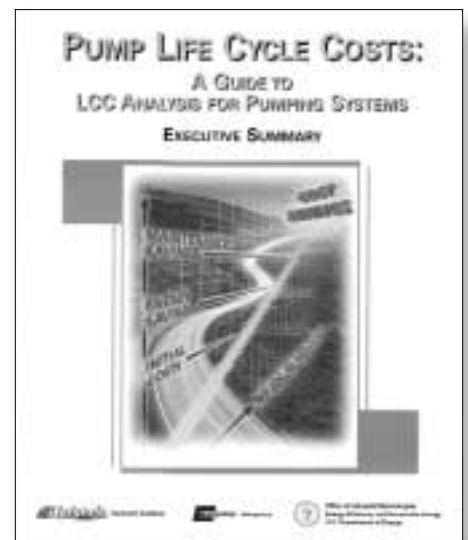
Pumping systems account for nearly 20% of the world's energy demand and, in some industrial operations, account for 20% to 50% of energy costs. However, because pumps function as a component of larger systems, companies may overlook opportunities to save energy and money and improve pump system performance.

Life Cycle Cost (LCC) analysis is a management tool that can help companies minimize waste and maximize energy efficiency for many types of systems, including pumping systems. The Hydraulic Institute and Europump, in cooperation with DOE, have developed *Pump Life Cycle Costs: A Guide to LCC Analysis for Pumping Systems, Executive Summary*. This overview document offers highlights

of a larger report that assists plant owners and operators in applying the LCC methodology to pumping systems.

The summary emphasizes the need to consider pump system costs that accrue over a lifetime of operation, not just the initial costs of installation or replacement. By understanding all of the components that figure into the cost of ownership, companies can dramatically reduce energy, operational, and maintenance costs.

Learn more about how you can apply LCC methods to pumping systems by downloading the summary from the BestPractices Web site at [www.oit.doe.gov/bestpractices/explore\\_library/technical\\_publications.shtml](http://www.oit.doe.gov/bestpractices/explore_library/technical_publications.shtml). ●



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## OIT Needs You for Steam System Opportunity

Oak Ridge National Laboratory (ORNL), in support of OIT, is performing a Steam System Opportunity Assessment and needs your input. The objective of this effort is to determine the savings available from steam system improvements and to increase awareness of these opportunities.

To date, the Steam System Opportunity Assessment has estimated the amount of steam generated and used in three of the most steam-intensive industries: Pulp and Paper; Chemical Manufacturing; and Petroleum Refining.

The next step is to estimate the size of the Steam System Performance Improvement Opportunities (PIO) that are available to these industries. ORNL is looking for assistance from steam system end users and steam system evaluation experts to identify and quantify Steam System PIOs. A questionnaire has been developed to obtain information on:

1. Typical savings associated with different PIOs,
2. The percentage of plants within these industries for which different PIOs are feasible, and

3. The primary rationale for implementing PIOs.

If you are interested in supporting this effort by completing the questionnaire, please contact:

Glenn McGrath, Resource Dynamics Corporation  
Phone: 703-356-1300, ext. 220  
E-mail: [mcgrath@rdcnet.com](mailto:mcgrath@rdcnet.com)

In exchange for providing input to this work, you will be acknowledged in and you will receive a copy of the final report. ●



## Ask the Clearinghouse

This column regularly highlights key questions from industrial customers. The questions are answered by the OIT Clearinghouse. Through the OIT Clearinghouse, you can access the full portfolio of OIT resources to help make your industry more energy efficient, productive, and competitive. The Clearinghouse can help you find resources, such as publications and software, or information about working with OIT and cost-sharing opportunities. You should also think of the Clearinghouse as a resource that specializes in providing technical advice about motor, steam, compressed air, and process heating systems.

Clearinghouse engineers and technical staff expertly answer a wide range of industrial efficiency questions, 11 hours a day, Monday-Friday. The Clearinghouse also has access to industry experts around the country. Call the OIT Clearinghouse at 800-862-2086, or go to [www.oit.doe.gov/clearinghouse/](http://www.oit.doe.gov/clearinghouse/) for additional information.



**We are attempting to reduce our overall usage of plant air. The problem is that we cannot agree on the actual cost of compressed air. One claim is that compressed air costs \$0.12 per 1,000 cubic feet. Do you have any supporting data that either confirms or refutes this claim?**



**A:** Large manufacturing plants often employ centrifugal compressors to meet their compressed air needs. These compressors commonly provide from 1,000 to 5,000 cfm of airflow with discharge pressures up to 125 psig. They typically have an operating power requirement of 16 to 20 kW/100 cfm of air provided.

If an average centrifugal compressor consumes 18 kW/100 cfm, 3 kWh would be required to provide 1,000 cubic feet of compressed air:

$$\begin{aligned} &18 \text{ kW/100 cfm} \times (10 \text{ min} \times \\ &100 \text{ cfm}) / 1000 \text{ cf} \times 1 \text{ hour/60 min} \\ &= 3 \text{ kWh/1000 cf} \end{aligned}$$

At an electrical rate of \$0.04/kWh, the cost for 1,000 cf of delivered air is exactly \$0.12.

Note that this compressed air cost rule-of-thumb can be modified based upon your compressor type and local energy rates. For instance, a double-acting reciprocating compressor typically requires 15 to 16 kW/100 cfm, while a single-stage lubricant-injected rotary screw compressor requires 18 to 19 kW/100 cfm. A lubricant-free rotary screw compressor typically requires 20 to 22 kW/100 cfm. Electricity prices also vary tremendously. Some areas of the country still have industrial energy rates as low as \$0.02/kWh, while others exceed \$0.10/kWh. ●



## Letters to the Editor

*Energy Matters* welcomes your typewritten letters and e-mails. Please include your full name, address, organization, and phone number, and limit comments to 200 words. Address correspondence to:

*Michelle Mallory, Letters to the Editor*

*NREL, MS 1609*

*1617 Cole Blvd.*

*Golden, CO 80401*

*E-mail: [michelle\\_sosa-mallory@nrel.gov](mailto:michelle_sosa-mallory@nrel.gov)*

We publish letters of interest to readers on related topics, comments, or criticisms/corrections of a technical nature. Preference is given to articles that appeared in the previous two issues. Letters may be edited for length, clarity, and style. ●

### IN THE NEXT ISSUE...

*Energy Matters will focus on Alternative Power Resources and will offer potential solutions to the power dilemma.*

*Don't miss the coverage on renewable energy technologies and other efficiency measures that could apply to your industry. We'll also include a special supplement to help you become more familiar with the potential of Distributed Energy Resources.*

*Watch for the next issue of Energy Matters.*

## ENERGY MATTERS EXTRA



Look to Energy Matters Extra for more coverage on the Volatile Energy Market. Learn how OIT's BestPractices can help ease the impact of high energy prices and energy shortages by offering tools to improve your plant's efficiency and productivity.

Link to a report that evaluates the effectiveness of OIT's BestPractices Program. Download the Pump System Assessment Tool (PSAT), a software program that can help you assess pump system efficiency in your plant. You can also see a summary

report of *Pump Life Cycle Costs: A Guide to LCC Analysis for Pumping Systems*, featured on page 6 of this issue, for ideas on calculating the total costs of owning and operating pumping systems.

Find out more about the upcoming BestPractices workshop series "Energy Solutions for California Industry: Ways to Improve Operations and Profitability," designed to help industries improve system efficiency and reduce electrical demand. Get details and registration information for the first workshop scheduled for August 14 in Sacramento.

Browse through the roadmap for process heating technology to learn about the industry's goals for reducing energy consumption, while meeting industrial process heating needs now and in the future.

Be sure to check out the money-saving opportunities available through NYSERDA's Energy \$mart Program and the California Energy Commission's Emerging Renewables Buy-Down Program.

Log on to Energy Matters Extra at [www.oit.doe.gov/explore\\_library/emextra](http://www.oit.doe.gov/explore_library/emextra). ●

## Coming Events

### UTAH 2001 INDUSTRY SHOWCASE

The State of Utah and OIT will present this Showcase to support, promote, and highlight the use of advanced technologies in aluminum manufacturing, petroleum refining, metal-casting, and mining. Attend the event:

- August 27-29, 2001, in Salt Lake City, UT

Find out more about the Utah Showcase by logging on to [www.oit.doe.gov/news.shtml](http://www.oit.doe.gov/news.shtml), or by calling 877-648-7967.

### SPIRAX SARCO/AEE ENERGY EFFICIENCY EXPOSITION AND WORKSHOP

- August 24-26, 2001, in Atlanta, GA

For more information, please log on to [www.aeecenter.org/shows/](http://www.aeecenter.org/shows/).

### INTEGRATED ENERGY EFFICIENCY CONGRESS/FACILITIES MANAGEMENT AND MAINTENANCE EXPO

- August 29-30, 2001, in Cleveland, OH

For more information, log on to [www.aeecenter.org/shows/](http://www.aeecenter.org/shows/).

### NIA/OIT INSULATION ENERGY APPRAISAL PROGRAM CERTIFICATION CLASSES

- September 6-7, 2001, in Philadelphia, PA
- October 15-16, 2001, Omaha, NE

For more information, log on to the BestPractices calendar at [www.oit.doe.gov/bestpractices/take\\_class/calendar.shtml](http://www.oit.doe.gov/bestpractices/take_class/calendar.shtml), or call Wendy Schmutte at the National Insulation Association 703-683-6422.

### ENERGY AND ENVIRONMENTAL TECHNOLOGIES CONFERENCE

- October 16-17, 2001, in Atlantic City, NJ

For more information, log on to [www.eetec.org](http://www.eetec.org), or call 609-499-3600, extension 3.

To keep up-to-date on OIT training and other events, check the calendar regularly on *Energy Matters Extra* at [www.oit.doe.gov/bestpractices/explore\\_library/emextra](http://www.oit.doe.gov/bestpractices/explore_library/emextra).

## BestPractices

The Office of Industrial Technologies (OIT) BestPractices initiative and its *Energy Matters* newsletter introduces industrial end users to emerging technologies and well-proven, cost-saving opportunities in motor, steam, compressed air, and other plant-wide systems. For overview information and to keep current on what is happening office wide, check out the newsletter—*The OIT Times*—at [www.oit.doe.gov/oit-times](http://www.oit.doe.gov/oit-times).



### INFORMATION CLEARINGHOUSE

Do you have questions about using energy-efficient process and utility systems in your industrial facility? Call the OIT Information Clearinghouse for answers, Monday through Friday 9:00 a.m. to 8:00 p.m. (EST).

**HOTLINE: 800-862-2086**


Fax: 360-586-8303, or access our homepage at [www.oit.doe.gov/clearinghouse](http://www.oit.doe.gov/clearinghouse).

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**ENERGY MATTERS**

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